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Research Scientist at Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State University,

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Research Interests

- Weather radar for hydrological modeling
- Radar remote sensing: Retrieval algorithms and applications for characterizing precipitation
- Multi-source precipitation data fusion: Algorithms, products and applications

Education

09/2009 - 01/2015	Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Beijing, China	**Ph.D.**
09/2005 - 07/2009	School of Water Conservancy and Environment, Zhengzhou University, Zhengzhou, China	**B.S.**

Professional Experience

02/2021 - present	Research Scientist, CIRA Colorado State University, *NOAA Physical Sciences Laboratory*, U.S.
12/2018 - 01/2021	Research Scientist, Department of Electrical and Computer Engineering, Colorado State University, Fort Collins, United States
09/2017 - 09/2018	Post-doctoral Research Fellow, Department of Civil and Environmental Engineering, The Hong Kong University of Science and Technology, Hong Kong, China
06/2017 - 08/2017	Visiting Scholar, Advanced Radar Research Center, National Weather Center, University of Oklahoma, Norman, United States
06/2015 - 11/2018	Post-doctoral Research Fellow, State Key Laboratory of Hydroscience and Engineering, Department of Hydraulic Engineering, Tsinghua University, Beijing, China

Guest Editor in Journal

- **Ma, Y.**, Cifelli, R., Pulkkinen, S., Chandrasekar, V. Special Issue "*Radar Remote Sensing: Retrieval Algorithms and Applications for Characterizing Precipitation*" in Remote Sensing (ISSN 2072-4292). https://www.mdpi.com/journal/remotesensing/special_issues/Radar_Precipitation

Projects Involved

[1] 10/2017 - 10/2021, Advanced Quantitative Precipitation Information, NOAA and California Department of Water Resources (**Attend**)

[2] 09/2016 - 08/2021, PFI:BIC: CityWarn - A Smart, Hyperlocal, Context-Aware Hazard Notification Service System, National Science Foundation (**Attend**)

[3] 06/2017 - 12/2018, Long term blended multi-satellite precipitation dataset across the Tibetan Plateau using version 2.0 of the Dynamic Bayesian Model Averaging algorithm, Open Fund of State Key Laboratory of Remote Sensing Science (**PI**)

[4] 01/2017 - 12/2018, The discrimination of solid-liquid precipitation phase over the Tibetan Plateau under the Hierarchical Bayesian Framework, National Natural Science Foundation of China Young Research Program (**PI**)

[5] 01/2017 - 12/2018, Integrated satellite, radar and gauge precipitation retrievals over complex mountainous regions, Open Fund of Key Laboratory for Aerosol-Cloud-Precipitation of China Meteorological Administration (**PI**)

[6] 01/2015 - 12/2018, Integrated Land-Space Multi-source Precipitation and Total Water Storage Retrievals for the Water Cycle Study over the Broader Tibetan Plateau, National Natural Science Foundation of China Major Research Program (**Attend**)

[7] 01/2016 - 06/2017, Evaluation and data fusion of the Day-1 IMERG products using the ground rainfall measurements over the Tibetan Plateau, China Postdoctoral Science Foundation General Research Program (**PI**)

[8] 06/2016 - 12/2017, Multi-source precipitation data fusion and satellite-based soil moisture retrieval, China National Flash Flood Disaster Prevention and Control Project (**Attend**)

[9] 01/2012 - 12/2017, Interactions between Multilayer Circle and Its Environmental Effects of Qinghai-Tibet Plateau-Transformation Process and Its Impact in Different Spheres of Modern Water, CAS Strategic Priority Research Program (B) (**Attend**)

[10] 01/2011 - 12/2013, Impacts of Climate Change on the Permafrost's Active-layer Water Cycle in the Northern of Tibetan Plateau, National Natural Science Foundation of China General Research Program (**Attend**)

Publications

Under Review and In Revision

- **Ma, Y.***, Chandrasekar, V., Chen, H., Cifelli, R., 2021. Quantifying the potential of AQPI gap-filling radar network for streamflow simulation through a WRF-Hydro experiment. *Journal of Hydrometeorology.* [Minor revision]

Peer-reviewed Journal Articles

[1] **Ma, Y.**, Sun, X., Chen, H., et al., 2021. A two-stage blending approach for merging multiple satellite precipitation estimates and rain gauge observations: An experiment in the northeastern Tibetan Plateau. *Hydrology and Earth System Sciences*, 25, 359-374.

[2] **Ma, Y.*** and Chandrasekar, V., 2020. A hierarchical Bayesian approach for bias correction of NEXRAD Dual-Polarization rainfall estimates: Case study on Hurricane Irma in Florida. *IEEE Geoscience and Remote Sensing Letters, 99, 1-5.*

[3] **Ma, Y.*,** Chandrasekar, V., Biswas, S., 2020. A Bayesian correction approach for improving dual-frequency precipitation radar rainfall rate estimates. *Journal of the Meteorological Society of Japan*, 98, 511-525.

[4] **Ma, Y.***, Lu, M., Bracken, C., Chen, H., 2020. Spatially coherent clusters of summer precipitation extremes in the Tibetan Plateau: Where is the moisture from? *Atmospheric Research*, 237: 104841.

[5] Chen, H., Cifelli, R., Chandrasekar, V., **Ma, Y.**, 2019. A flexible Bayesian approach to bias correction of radar-derived precipitation estimates over complex terrain: model design and initial verification. *Journal of Hydrometeorology*, 20: 2367-2382.

[6] Gou, Y., **Ma, Y.**, Chen, H. 2019. Utilization of a C-band polarimetric radar for severe rainfall event analysis in complex terrain over Eastern China. *Remote Sensing, 11(1), 22.*

[7] Hong, Y., Tang, G., **Ma, Y.**, et al., 2019. Remote Sensing Precipitation: Sensors, Retrievals, Validations, and Applications. *Observation and Measurement of Ecohydrological Processes, Ecohydrology, 107-128.*

[8] Chu, Z., **Ma, Y.**, Zhang, G., et al., 2018. Mitigating spatial discontinuity of multi-radar QPE based on GPM/ KuPR. *Hydrology*, 5(3), 48.

[9] **Ma, Y.***, Lu, M., Chen, H., et al., 2018. Atmospheric moisture transport *versus* precipitation across the Tibetan Plateau: a mini-review and current challenges. *Atmospheric Research*, 209: 50-58. [Invited review article]

[10] Gou, Y., **Ma, Y.**, Chen, H., et al., 2018. Radar-derived quantitative precipitation estimation in complex terrain over the Eastern Tibetan Plateau. *Atmospheric Research*, 203: 286-297.

[11] Wan, W., Zhao, L., Xie, H., Liu, B., Li, H., Cui, Y., **Ma, Y.,** Hong, Y. 2018. Lake surface water temperature change over the Tibetan Plateau from 2001-2015: a sensitive indicator of the warming climate. *Geophysical Research Letters*. DOI: 10.1029/2018GL078601

[12] **Ma, Y.**, Hong, Y., Chen, Y., et al., 2018. Performance of optimally merged multi-satellite precipitation products using the dynamic Bayesian Model Averaging scheme over the Tibetan Plateau. *Journal of Geophysical Research: Atmospheres,* 123: 814-834.

[13] **Ma, Y.**, Yang, Y., Han, Z., et al., 2018. Comprehensive evaluation of Ensemble Multi-Satellite Precipitation Dataset using the Dynamic Bayesian Model Averaging scheme over the Tibetan Plateau. *Journal of Hydrology*, 556: 634-644.

[14] Tang, G., Wen, Y., Gao, J., Long, D., **Ma, Y.**, Wan, W., Hong, Y., 2017. Similarities and differences between three co-existing spaceborne radars in global rainfall and snowfall estimation. *Water Resources Research*, 53: 3835-3853.

[15] **Ma, Y.**, Tang, G., Long, D., et al., 2016. Similarity and error intercomparison of the GPM and its predecessor TRMM multisatellite precipitation analysis using the best available hourly gauge network over the Tibetan Plateau. *Remote Sensing*, 2016, 8(569): 1-17

[16] Tang, G., **Ma, Y.**, Long, D., et al., 2016. Evaluation of GPM Day-1 IMERG and TMPA version-7 legacy products over mainland China at multiple spatiotemporal scales. *Journal of Hydrology*, 533: 152-167

[17] Wan, W., Long, D., Hong, Y., **Ma, Y.**, Yuan, Y., Xiao, P., Duan, H., Han, Z., Gu, X., 2016. A lake data set for the Tibetan Plateau from 1960s, 2005, and 2014. *Scientific Data*, DOI: 10.1038/sdata.2016.39

[18] **Ma, Y.***, Zhang, Y., Yang, D., et al., 2015. Precipitation bias variability versus various gauges under different climatic conditions over the Third Pole Environment (TPE) region. *International Journal of Climatology*, 35: 1201–1211

[19] **Ma, Y.***, Zhang, Y., Zubrzycki S., et al., 2015. Hillslope-scale variability in seasonal frost depth and soil water content investigated by GPR on the southern margin of the sporadic permafrost zone on the Tibetan Plateau. *Permafrost and Periglacial Processes*, 26: 321-334

[20] Farhan, S., Zhang, Y., **Ma, Y.**, et al., 2015. Hydrological regimes under the conjunction of westerly and monsoon climates: a case investigation in the Astore basin, Northwestern Himalaya. *Climate Dynamics*, 44: 3015-3032

[21] Zhang, Y., **Ma, Y.***, Zhang, Y., et al., 2015. Hillslope patterns in thaw-freeze cycles and hydrothermal regimes over Tibetan Plateau. *Science Bulletin*, 60(7): 664-673 (in Chinese with English Abstract)

[22] Zhang, Y., **Ma, Y.**, Guo, Y., et al., 2012. Hydrological changes during the past 50 years over the Tibetan Plateau and its regional difference. *Quaternary Sciences*, 32: 95-102 (in Chinese with English Abstract)

[23] **Ma, Y.***, Yi, C., Wu, J., et al., 2012. Lake surface expansion of Nam Co during 1970-2009: evidence of satellite remote sensing and cause analysis. *Journal of Glaciology and Geocryology*, 34:81-88. (in Chinese with English Abstract)

[24] Zhang, Y., Yao, T., **Ma, Y.**, 2011. Climatic changes have led to significant expansion of endorheic lakes in Xizang(Tibet) since 1995. *Sciences in Cold and Arid Regions*, 3: 0463-0467.

Peer-reviewed Conference Proceedings

[1] Liu, R., **Ma, Y.***, Yang, Y., et al., 2017. Error Analysis of ensemble multi-satellite precipitation datasets over the Tibetan Plateau. *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS).* DOI:10.1109/IGARSS.2017.8128047

[2] **Ma, Y.***, Zhang, Y., Farhan, S., et al., 2012. Permafrost soil water content evaluation using high-frequency ground-penetrating radar in Amdo catchment, Central Tibetan Plateau, *Ground Penetrating Radar (GPR), 2012 14th International Conference on. IEEE*, pp. 633-638

(indicates the corresponding author)*

Conference Presentations

[1] Chandrasekar, V., **Ma. Y**., Lyons, E., et al., 2021. Fusion of multisensory observations over the Dallas/Fort Worth International Airport for precipitation monitoring and environmental protection. 101st American Meteorological Society Annual Meeting. VIRTUAL. Jan 10-15, 2021. [Oral presentation]

[2] **Ma, Y.,** Chandrasekar, V., Cifelli, R., et al., 2020. The connection between extreme Rainfall and hydrologic extremes in the San Francisco Bay area. 100th American Meteorological Society Annual Meeting. Boston, United States. Jan 12-16, 2020. [Oral presentation]

[3] **Ma, Y.,** Chandrasekar, V., Cifelli, R., Chen, H., 2019. Hydrological responses to precipitation extremes: an investigation of the National Water Model system in the San Francisco Bay area using AQPI gap-filling radar. AGU Fall Meeting, San Francisco, United States. Dec 9-13, 2019. [Poster presentation]

[4] Chandrasekar, V., **Ma, Y.,** Biswas, S., 2019. GPM rainfall estimates using ground radar observations and a Bayesian approach. EGU General Assembly 2019. Vienna, Austria. Apr 7-12, 2019. [Oral presentation]

[5] **Ma, Y.**, Hong, Y., Yang, Y. et al., 2018. Multi-satellite precipitation data fusion algorithm and its application in the Tibetan Plateau. The 2nd Remote Sensing Young Forum of Peking University. Beijing, China. May 28-29, 2018. [Oral presentation]

[6] **Ma, Y.**, Hong, Y., Yang, Y., et al., 2016. Long-term multi-satellite merging precipitation data set over the Tibetan Plateau using the dynamic Bayesian Model Averaging scheme. The 2016 Academic Annual Meeting of the China Society on Tibetan Plateau. Quanzhou, China. Dec 28-30, 2016. [Oral presentation]

[7] **Ma, Y.**, Hong, Y., Tang, G., et al., 2016. Review of integrated land-space multi-source precipitation over the Tibetan Plateau. The 1st Big Data Forum on Global Satellite Water Cycle and Hydraulics, Tsinghua University, Beijing, China. Jun 27, 2016. [Oral presentation]

[8] **Ma, Y.**, Tang, G., Hong, Y., et al., 2015. First evaluation of Day-1 IMERG products using the best-available hourly rain gauge network over the Tibetan Plateau. AGU Fall Meeting, San Francisco, United States. Dec 14-18, 2015. [Poster presentation]

[9] **Ma, Y.**, Zubrzycki, S., 2014. Hillslope spatial variability in sub-surface characteristics on the southern edge of patchy permafrost over Tibetan Plateau by using ground-penetrating radar. The Earth Living Skin: Soil, Life and Climate Changes, Bari, Italy. Sep 22-25, 2014. [Poster presentation]

[10] **Ma, Y.**, Zubrzycki, S., 2014. Investigation on thawing and freezing processes using high-frequency ground penetrating radar in Amdo catchment, central Tibetan Plateau. European Geosciences Union General Assembly, Vienna, Austria. Apr 23-28, 2014. [Poster presentation]

[11] **Ma, Y.**, Zhang, Y., Farhan, S., et al., 2012. Permafrost Soil Water Content Evaluation using High-Frequency Ground-penetrating Radar in Amdo Catchment, the Middle of Tibetan Plateau. The 10th International Conference on Permafrost, Salekhard, Russia. Jun 25-29, 2012. [Poster presentation]

[12] **Ma, Y.**, Zhang, Y., 2011. Effect of climate change on endorheic lakes in central Tibetan Plateau. The 9th China Water Forum, Lanzhou, China. Aug 2-3, 2011. [Oral presentation]

Patents & Software Copyrights

[1] **Ma, Y.**, Hong, Y., Yang, Y, 2019. Integrated multi-satellite precipitation data algorithms and system. CN107918166, https://patents.google.com/patent/CN107918166/, State Intellectual Property Office of China. October 18th, 2019. (*Patent*)

[2] **Ma, Y.**, Yang, Y., Hong, Y, 2019. Integrated multi-satellite precipitation prediction algorithms and system using spatial interpolation method. CN107918165, https://patents.google.com/patent/CN107918165/, State Intellectual Property Office of China. October 18th, 2019. (*Patent*)

[3] **Ma, Y.**, Han, Z., Hong, Y, 2019. Gauge-based precipitation bias adjustment algorithms and system over different climate zones. CN106650239, https://patents.google.com/patent/CN106650239, State Intellectual Property Office of China. April 5th, 2019. (*Patent*)

[4] **Ma, Y.**, et al., 2018. Gauge-based precipitation bias adjustment systems over various climate zones. State Intellectual Property Office of China. No. 2018SR065532. (*Software Copyright*)

[5] **Ma, Y.**, et al., 2017. Integrated multi-satellite precipitation prediction system using dynamic Bayesian modeling average algorithms. State Intellectual Property Office of China. No. 2017SR042244. (*Software Copyright*)

Service: Journal Review (Publons: 60 verified reviews in total)

- IEEE Transactions on Geoscience and Remote Sensing (7)
- IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (2)
- Journal of Hydrology (21)
- Journal of Hydrometeorology (2)
- Journal of Meteorological Research (1)
- Atmospheric Research (7)
- Advance in Meteorology (1)

- Atmosphere (1)
- Applied Sciences (1)
- Remote Sensing (2)
- Water (6)
- International Journal of Climatology (1)
- Meteorological Applications (2)
- Frontiers of Earth Science (2)
- Climate (2)
- Land (1)
- Sustainability (1)